



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D2580-1
Job Sheet 209503



Part No: D2580-1

Job Qty: 2 pcs

Part Name: 205 Bent Tube



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 5/1/20

Job Tracking No:

Due Date: 5/28/20

Created By: Marie Lajeunesse

Type: Stock

Description: SIOP

Note: DWG D2580 REV h SHEETS 1,2,3,8 IPP B 01.11.08 Revised Step 9, 10, 12, and 13 SM IPP Rev:C 10.12.01 as per DEO D1 DD verf:ec

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Skidtubes - 1	2 pcs	5/27/20		0.00	2.56	Skidtubes - 1		DTP 20-05-20
							Skidtubes - 2		
							Skidtubes - 3		
							Skidtubes - 4		
							Skidtubes - 5		
							Skidtubes - 6		
							Skidtubes - 7		
101	QC 5	2 pcs	5/27/20		0.00	0.00	QC 5 - 10		DAS 03 9-89
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		
							QC 5 - 82		
110	Handfinish - 1-1 Chemical-B4B	2 pcs	5/27/20		0.00	0.67	Handfinish - 1 - 1 - B4B		BFB 20-05-25
							Handfinish - 1 - 2 - B4B		
							Handfinish - 1 - 3 - B4B		

Plex 5/1/20 9:04 AM Dart.lajeunesse.marie

				Handfinish - 1 - 4 - B4B	
				Handfinish - 1 - 5 - B4B	
				Handfinish - 1 - 6 - B4B	
				Handfinish - 1 - 7 - B4B	
				Handfinish - 1 - 8 - B4B	
				Handfinish - 1 - 9 - B4B	
				Handfinish - 1 - 10 - B4B	
				Handfinish - 1 - 11 - B4B	
				Handfinish - 1 - 12 - B4B	
				Handfinish - 1 - 13 - B4B	
				Handfinish - 1 - 14 - B4B	
				Handfinish - 1 - 15 - B4B	
				Handfinish - 1 - 16 - B4B	
				Handfinish - 1 - 17 - B4B	
				Handfinish - 1 - 18 - B4B	
				Handfinish - 1 - 19 - B4B	
				Handfinish - 1 - 20 - B4B	
				Handfinish - 1 - 21 - B4B	
				Handfinish - 1 - 22 - B4B	
120	QC 7	2	5/27/20	0.00 0.00	QC 7 - 10
		pcs			QC 7 - 13
					QC 7 - 14
					QC 7 - 15
					QC 7 - 17
					QC 7 - 18
					QC 7 - 19
					QC 7 - 2
					QC 7 - 28
					QC 7 - 3
					QC 7 - 30
					QC 7 - 34
					QC 7 - 36
					QC 7 - 37
					QC 7 - 41
					QC 7 - 47
					QC 7 - 48
					QC 7 - 51
					QC 7 - 58
					QC 7 - 59
					QC 7 - 60
					QC 7 - 9
					QC 7 - 68
					QC 7 - 50
					QC 7 - 67
					QC 7 - 40
					QC 7 - 24
					QC 7 - 43
					QC 7 - 61

DAS
03
9-89

					QC 7 - 81	
					QC 7 - 76	
					QC 7 - 79	
					QC 7 - 83	
					QC 7 - 82	
					QC 7 - 87	
125 Skidtubes - 2 - B4B	2 pcs	5/28/20	0.00	0.83	Skidtubes - 1 - B4B	
					Skidtubes - 2 - B4B	
					Skidtubes - 3 - B4B	
					Skidtubes - 4 - B4B	
					Skidtubes - 5 - B4B	DAS
					Skidtubes - 6 - B4B	03
					Skidtubes - 7 - B4B	9-89
130 QC 5	2 pcs	5/28/20	0.00	0.00	QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	BF
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	
					QC 5 - 9	
					QC 5 - 50	
					QC 5 - 30	
					QC 5 - 40	
					QC 5 - 61	
					QC 5 - 81	
					QC 5 - 82	
140 Packaging 3-1 - Stock - B4B	2 pcs	5/28/20	0.00	0.00	Packaging 3 - 1 - B4B	
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	BF

				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
				Packaging 3 - 37 - B4B	
150	QC 21 - SA	2	5/28/20	0.00 0.00	QC 21 - SA - 21
		pcs			QC 21 - SA - 70
					QC 21 - SA - 53

DAS

21

9-58

MAY 27 2020

Part Op 100 - (Skidtube) 1- Inspect mat'l D2500-1-190 for damage. 2-Drill pilot holes using drill jig DT 8149 A-BC-D 3-Open holes Descriptions: to 0.508" as per Dwg D2580 4-Deburr holes per QSI002 section 4.2.3 and blow out all chips from inside of tube 5- Test fit inspection saddles on FWD & AFT saddle holes using DT9916.

101 - (QC5- Inspect part completeness to step on W/O)

110 - (Chemical Conversion Coat per QSI005 4.1)

120 - (QC7-Inspect Chemical Conversion Coat)

125 - (Skidtube) 1- Bond web in place per QSI 015. A/R Sikaflex-291 batch: _____ Sikaflex expire date: _____ Start time and date: _____ bond for 12hrs

130 - (QC5- Inspect part completeness to step on W/O)

140 - (Identify as per dwg & Stock Location LG002) LOCATION : LG002

150 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D2500-1-190	Ext'n - 'I' Beam Tube 4"	2 pcs (1 ea)	100-Skidtubes - 1	8206075
D2596	Web, 205 Skidtube	2 pcs (1 ea)	125-Skidtubes - 2 - B4B	5278597

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Skidtubes - 1	D2500-1-190	2	44	0
125-Skidtubes - 2 - B4B	D2596	2	0	0

Part Specifications

Specifications could not be found.

Plex 5/1/20 9:04 AM Dart.lajeunesse.marie

H

ITEM	QTY	QTY	QTY	QTY	PART NUMBER	DESCRIPTION
1	X	-441	-447	-448	D2580-041	SKIDTUBE ASSEMBLY
2					D2580-045	SKIDTUBE ASSEMBLY
3			X		D2580-047	SKIDTUBE ASSEMBLY
4				X	D2580-048	SKIDTUBE ASSEMBLY
20	1	1	1	1	D2580-1-100	EXTRUSION
21			16	16	D2570	BUSHING
22	1	1	1	1	D2576-3	STEP
23	4	4			D2579	SPACER
24	16	16	8	8	D2584-1	PLUG
25	16	16	8	8	D2584-3	O-RING
26	1	1	1	1	D2586	205 WEB
27	1	1	1	1	D2585	AFT CAP
28	1	1			D3584-5	WEARSHOE
29	1	1			D3584-6	WEARSHOE
30	1	1			D3584-11	WEARSHOE
31	1	1			D3584-13	WEARSHOE
32	20	20	24	24	D4202-1	SPACER
33			1	1	D4405-041	WEARPLATE ASSEMBLY
34			1	1	D4405-043	WEARPLATE ASSEMBLY
35				1	D5081-1	FWD WEARPLATE
36				1	D5081-3	AFT WEARPLATE
60	60	60			ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
61	50	50			ANSC44	BOLT
62	2	2	2	2	AN3-5A	BOLT
63			8	8	ANA-45A	BOLT
64	50	50			NA51148C0332R	WASHER (AN860C10L)
65	2	2	2	2	NA51148D0332J	WASHER (AN860J10L)
66			8	8	MS21042-4	NUT (OR MS21042-4)

GENERAL NOTES:

- 1) MATERIAL: WA
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2586 WEB POWDER COAT (-045) GREEN SANDTEX (REF 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 33.7 lbs
D2580-045 = 33.7 lbs
D2580-047 = 45.1 lbs
D2580-048 = 32.0 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2586 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BONDING. ENSURE HOLES LINE UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8637 ONLY FOR D2580-041-045 TO LOCATE AND DRILL 60.267 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL ANSC44 BOLTS AND NA51148C0332R WASHERS WITH SIKAFLEX-241-291.
- 12) INSERT D2584-1 PLUG CW D2584-3 O-RING IN HOLES MARKED "P" (BOTH SIDES OF TUBE) AFTER FINISH 16 PLACES FOR D2580-041-045 AND 8 PLACES FOR D2580-047-048
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2585 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

SHOP COPY
RETURN TO
ENGINEERING

UNCONTROLLED COPY
SUBJECT TO AMENDMENT

WITHOUT NOTICE

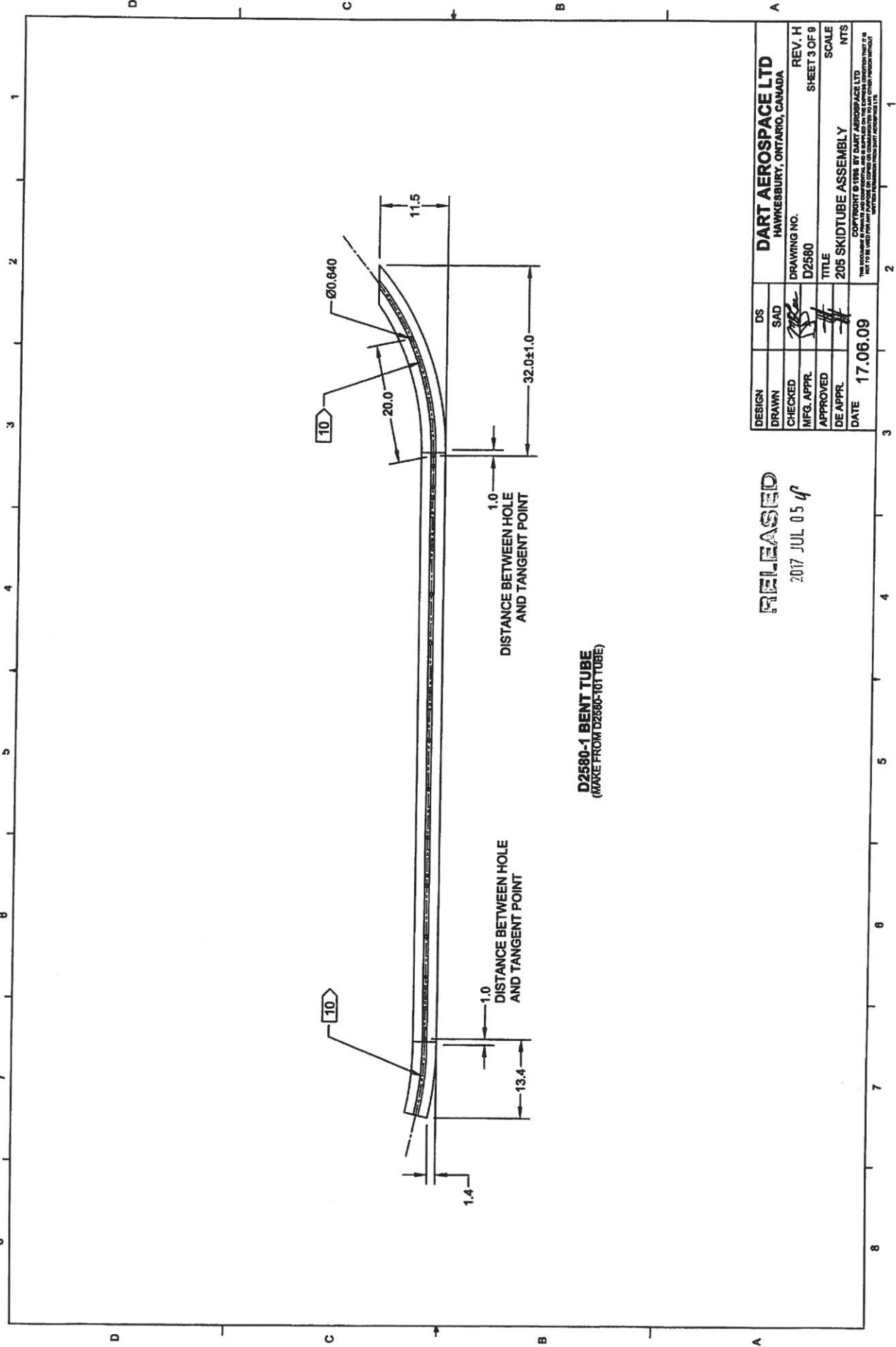
WORK ORDER

NO. 205-01

RELEASED

2017 JUL 05 14
ECN-T-SH

REV.	DESCRIPTION	DS	BY	DATE
H	SHEET: PL DELETE D3586-1-04-13 GASKETS, WEIGHTS UPDATED ACCORDINGLY. SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS	SAD		17.06.09
G	ADDED -046, -047 WEIGHT UPDATED PER DSI 8588	AJS		14.04.09
F	INCORPORATE DEO D2580-E-1 PER PART 12-218	DC		13.08.20
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-9); INCLUDED DEO D2580-C-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8637 WAS TD2577-205 (ZN C4-1)	RF		11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 8124/ 9183	PH		07.04.06
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP		06.08.28
B	AS MANUFACTURED	DS		06.12.02
A	NEW ISSUE	DS		06.08.16
DESIGN		DS		
DRAWN		SAD		
CHECKED		PH		
MFG. APPR.		D2580		
APPROVED		PH		
DE APPR.		PH		
DATE	17.06.09			
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA				
DRAWING NO. D2580				
REV. H				
SHEET 1 OF 9				
TITLE 205 SKIDTUBE ASSEMBLY				
SCALE NTS				
COPYRIGHT © 1998 BY DART AEROSPACE LTD ALL RIGHTS RESERVED. NO PART OF THIS PUBLICATION MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.				



D2580-1 BENT TUBE
(WAKE FROM D2580-101 TUBE)

RELEASED
2017 JUL 05 *qf*

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	DRAWING NO. D2580
MFG. APPR.	<i>[Signature]</i>	REV. H SHEET 3 OF 8
APPROVED	<i>[Signature]</i>	TITLE 205 SKIDTUBE ASSEMBLY
DE APPR.	<i>[Signature]</i>	SCALE NTS
DATE	17.06.09	COPYRIGHT © 1998 BY DART AEROSPACE LTD. THIS DRAWING IS UNCLASSIFIED AND IS RELEASED IN THE PUBLIC DOMAIN EXCEPT THAT IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.

11

Diagram illustrating the underside of the D2576-3 step. The diagram shows a cross-section of the step with the following labels:

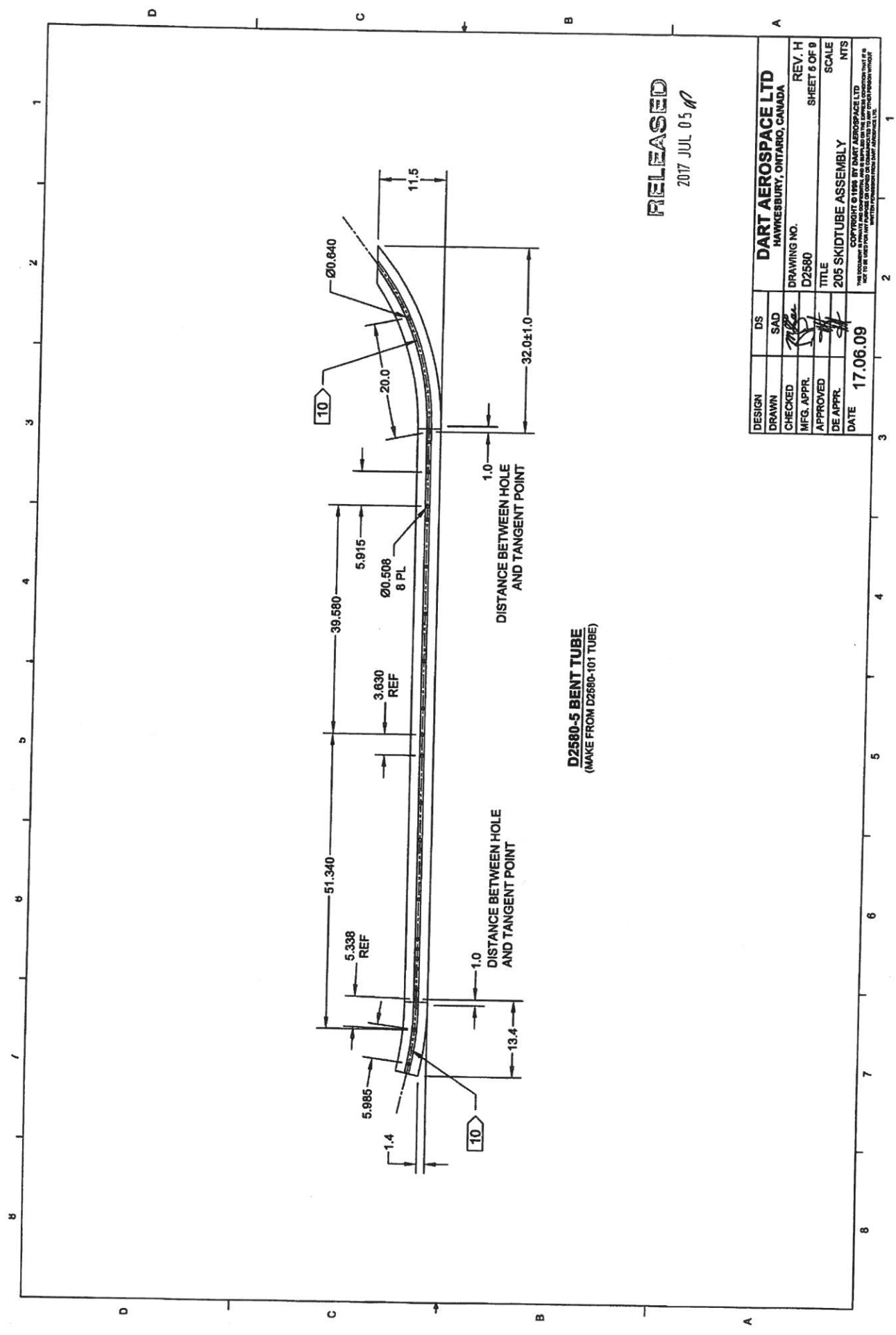
- D2576-3 STEP
- GRIND FLUSH
- LOCATION RIDGE ON UNDERSIDE OF D2576-3
- GRIND FLUSH 4 PL
- GRIND FLUSH
- $\frac{1}{4}$

11 ALS7-1032-130, REF
TVR 50 01

AFTER DRILLING AND BENDING ASSEMBLY

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D25800 REV. H SHEET 4 OF 9 SCALE NTS COPYRIGHT © 1984 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PROJECT AND FOR THE QUANTITY SPECIFIED THEREON. IT IS NOT TO BE REPRODUCED OR USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.
DRAWN	SAD	
CHECKED	<i>WCE</i>	
MFG. APPR.	<i>WCE</i>	
APPROVED	<i>WCE</i>	
DE APPR.	<i>WCE</i>	205 SKIDTUBE ASSEMBLY
DATE	17.06.09	

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED TO THE EXPENSES COMPANY FOR THE PURPOSE OF REVIEW ONLY. IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT PERMISSION FROM DART AEROSPACE LTD.



RELEASED
2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAYESBURY, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	DRAWING NO.
MFG. APPR.	<i>[Signature]</i>	D2580
APPROVED	<i>[Signature]</i>	TITLE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY
DATE	17.06.09	SCALE
		NTS

CONFIDENTIAL
THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD
AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD



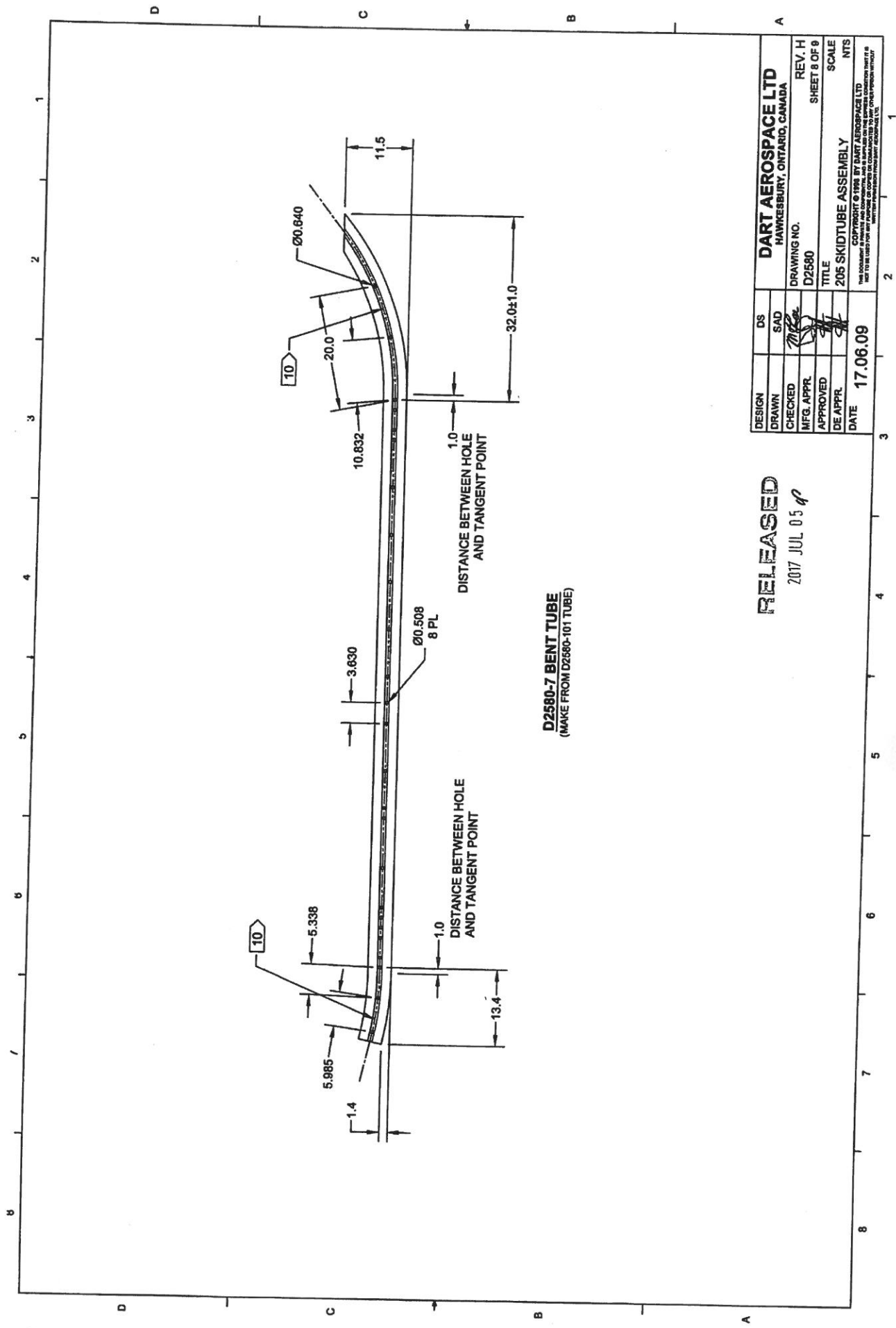
**AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:**

1. INSERT D402-1 SPACER (24 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002

DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD	DRAWING NO.	REV. H
CHECKED	<i>[Signature]</i>	D2580	SHEET 7 OF 8
MFG. APPR.	<i>[Signature]</i>	TITLE	SCALE
APPROVED	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
DE APPR.	<i>[Signature]</i>	COPYRIGHT © 1988 BY DART AEROSPACE LTD	
DATE	17.06.09	THIS DOCUMENT IS PREPARED AND CONTROLLED AND IS APPROVED FOR THE COMPANY BY THE PERSON SIGNING IT. IT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT PERMISSION OF DART AEROSPACE LTD.	

RELEASE

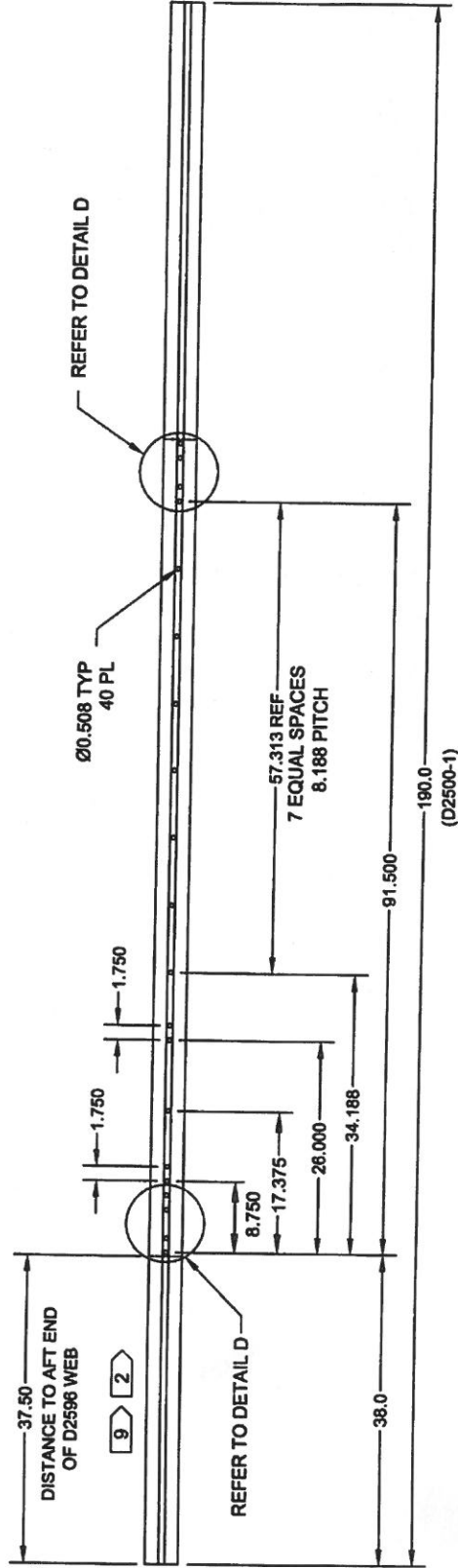
2017 JUL 05 *sp*



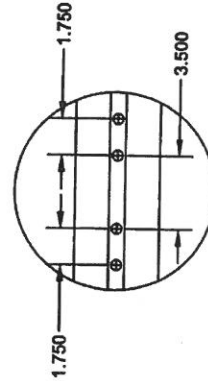
D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)

RELEASED
2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	DRAWING NO. REV. H
MFG. APPR.	<i>[Signature]</i>	D2580 SHEET 8 OF 9
APPROVED	<i>[Signature]</i>	TITLE SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY NTS
DATE	17.06.09	THIS DOCUMENT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE



D2580-101 TUBE



DETAIL D
SCALE 5X

RELEASED
2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED	MS	DRAWING NO. D2580
MFG. APPR		REV. H SHEET 9 OF 9
APPROVED		TITLE 205 SKIDTUBE ASSEMBLY
DE APPR		SCALE NTS
DATE	17.06.09	COPYRIGHT © 1998 BY DART AEROSPACE LTD

THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES SPECIFIED IN THE ORDER. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.

Entered: _____

Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____		DISPOSITION ☐ Rework ☐ Scrap ☐ Use-as-is ☐ Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality		DEPARTMENT/PROCESS		MRB (QS1042)	
Date : _____		Sequence #: _____		QTY Affected : _____			
Description Work Order Deviation		Disposition					
Root Cause ☐ Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled Other/Details: _____ ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread							
Completed By		Lead hand / Supervisor					
QC / QA Coordinator							